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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/721,760

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Yasunori Kuratomi

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EXAMINER

BLACKMAN, ROCHELLE ANN J

ART UNIT

PAPER NUMBER

2851

DATE MAILED: 12/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/721,760	Applicant(s) KURATOMI, YASUNORI	
	Examiner Rochelle Blackman	Art Unit 2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 November 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-38 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 November 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "light rod", "light emitting diode array" and "plurality of light emitting diodes" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

The abstract of the disclosure is objected to because on pg. 15, paragraph [44], 1st line, "light source 11" should be - -light source 110- -. On pg. 23, paragraph [55], line 8, there should be a space between "164" and "is". Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-15, 22, 23, and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by Tiao et al. (U.S. Patent No. 6,254,246).

Tiao discloses a projection display (see FIGS. 2-9) comprising: an illumination module (200, 300, 400, 500, 700, 800, 900a-c); an optical modulator (212, 320, 750, 850, 910a-c) for modulating light incident from the illumination module in response to image data; and a projection optical system (930) for projecting light emitted from the optical modulator on an enlarged scale, wherein the illumination module comprises: at least one light source (202, 302, 302a-c, 710, 810); and a light recycling unit (206, 310, 312, 314, 316, 318, 410, 412, 414, 510, 512, 514, 516, 520, 522, 524, 720, 722, 722', 730, 740, 820, 822, 830, 832, 840) which causes light emitted from the light source having an emission angle beyond a predetermined range in which light can be

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effectively projected by the projection optical system to travel within the predetermined range; wherein the light source includes a light emitting diode (204, 306, 712, 812); wherein the light source includes a light emitting diode array (see 202, 302, 710, 810) on which a plurality of light emitting diodes (204, 306, 712, 812) are arranged; wherein the light source includes an organic electro-luminescence device (see col. 3, lines 7-11); wherein the light recycling unit includes: an integrator (206, 310, 720, 820) for guiding light incident from the light source to the optical modulator and including an optical angle converter (see 208, 314, 522, 722', 830, 832) which changes a propagation angle of light; and an optical angle selector (410, 510) disposed on an output side of the integrator for selectively transmitting or reflecting light depending on an incident angle of the light; wherein the integrator includes a light guide (310, 822) in the form of a flat panel through which light propagates by using a total reflection, and the light source projects light to at least one edge surface of the light guide; wherein the optical angle converter includes a scattering pattern (see 314, 522) disposed on at least one of a light emitting surface of the light guide and a surface opposite to the light emitting surface; wherein the optical angle converter includes a diffraction pattern (see 314, 522) disposed on at least one of the light emitting surface of the light guide and a surface opposite to the light emitting surface; wherein the integrator includes a light tunnel (see 310, 822) in the form of a hollow rectangular pipe having a light reflecting surface formed at the inner walls thereof, and the light source radiates light to one end of the light tunnel; wherein the optical angle converter is located at an end of the light tunnel on the opposite side of the light source (see 722' and 830, 832); wherein the integrator

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includes a light rod (see 310, 820) in the form of a hollow rectangular pipe made of a transparent material, and the light source radiates light to an end of one side of the light rod; wherein the optical angle converter is located at an end of the light tunnel on the opposite side of the light source (see 832); wherein the optical angle selector includes a selective transmission member (410, 510) which transmits light emitted from the integrator having an emission angle within a predetermined range in which light can be effectively projected by the projection optical system and reflects light having an emission angle outside of the predetermined range; wherein the optical angle selector includes a polarization member (412, 512) which transmits only light having a polarization that can pass through the optical modulator and reflects other polarizations, when the optical modulator is a transmission-type optical device which permits only light having a predetermined polarization to pass therethrough; wherein the polarization member is located on an output side of the selective transmission member (see location of 512); a transmission-type optical modulator (212, 320, 750, 850, 910a-c) for modulating light incident from the illumination module in response to image data; and a projection optical system (930) for projecting light emitted from the transmission-type optical modulator on an enlarged scale, wherein the illumination module comprises: a light guide (206, 310, 720, 820) through which light propagates by a total reflection, and which includes an optical angle converter (see 208, 314, 522, 722', 830, 832) located on at least one of a light emitting surface thereof and a surface opposite to the light emitting surface, for changing an angle of light propagating through the light guide; at least one light source (202, 302, 302a-c, 710, 810) for projecting light to at least one

edge surface of the light guide; and a selective transmission member (see 410) which transmits light emitted from the light guide having an angle within a predetermined range in which light can be effectively projected by the projection optical system and reflects light having an emission angle outside of the predetermined range back to the light guide; wherein the illumination module further includes a polarization member (412, 512) disposed on an output side of the selective transmission member for transmitting light having a polarization that can be transmitted through the optical modulator and reflecting other polarizations.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 16-21, 24, 25, and 27-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tiao et al. (U.S. Patent No. 6,254,246) in view of Parker et al. (U.S. Patent No. 2001/0053075).

Tiao discloses the claimed invention except for wherein the optical angle selector further includes "a prism sheet on which a pattern of micro prisms whose apex is directed toward the optical modulator/ transmission-type optical modulator is formed";

and wherein the optical angle selector further includes "an anisotropic diffusion member interposed between the integrator/ light guide and the prism sheet".

Parker teaches providing a prism sheet (8) on which a pattern of micro prisms (5) whose apex is directed toward the optical modulator/ transmission-type optical modulator is formed; and an anisotropic diffusion member (30) interposed between the integrator/ light guide and the prism sheet.

It would have been obvious to one of ordinary skill in the art at the time invention was made to provide the "optical angle selector" of the "illumination module" of the projection display" of the Tiao reference with "a prism sheet on which a pattern of micro prisms whose apex is directed toward the optical modulator/ transmission-type optical modulator is formed" and "an anisotropic diffusion member interposed between the integrator/ light guide and the prism sheet", as taught by Parker in order to provide a light directing film that redistributes more of the light emitted by the light source toward a direction normal to the plane of the film, thus producing a softer image without the brightness decrease associated with films that have a matte or diffuse finish on the light entrance surface of the films, for increased effectiveness (see pg. 1, paragraph [0009]).

2. Claims 33-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tiao et al. (U.S. Patent No. 6,254,246) in view of Parker et al. (U.S. Patent No. 2001/0053075).

Tiao disclose the claimed invention except for "a reflecting plate positioned proximate to the optical angle converter".

Parker teaches providing a reflecting plate (40) positioned proximate to an optical angle converter (see bottom surface of light guide in FIG. 1).

It would have been obvious to one of ordinary skill in the art at the time invention was made to provide the "plurality of illumination modules" of the "projection display" of the Parker reference with a "reflecting plate", as taught by Tiao in order to reflect ambient light entering the display back out the display to increase the brightness of the display (see pg. 3, paragraph [0040]).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rochelle Blackman whose telephone number is (571) 272-2113. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RB



JUDY NGUYEN
PRIMARY EXAMINER